



Year 2004

Air Quality Division

ANNUAL AIR EMISSIONS INVENTORY QUESTIONNAIRE
For Facilities Permitted to Operate Generators

Instructions

The 2004 Annual Emissions Inventory Questionnaire includes 4 forms that are required to be completed and submitted to the Air Quality Division. Instructions for each form are included below. Upon completion, submit the forms along with the signature by the Responsible Official of the facility within 90 days of receipt of a letter from the Department.

FORM 1: Facility General Information

SECTION I thru III: Complete all fields as requested.

FORM 2: Equipment & Process Data

- Table 1: List all details on the generators along with the Authorization To Operate (ATO) number for all the permitted equipment. Indicate, if not available.
- Table 2: Provide details of each stack.

FORM 3: Emissions Data

Based on the type of fuel used, (Gasoline, Diesel, or Natural Gas/Liquid Propane), choose the appropriate table to input the generator horsepower and hours of operation during the calendar year 2004. ***All the formulas are set to complete the calculations as the data is inputted. Therefore, do not move or change any of the fields or columns.*** A sample of the calculations are provided on Form 2 for anyone who downloads the PDF file as they will have to complete the calculations.

FORM 4: Summary & Certification

A summarization of all the emissions by each pollutant will be listed within this form. All reports submitted to the Department should be certified true and accurate by the Responsible Official of the facility. This person is the owner or operator of the facility. **If there is a change of the Responsible Official of the facility, please notify the Department with an additional letter stating so.**

The completed questionnaire should be submitted to the following address:

**Arizona Department of Environmental Quality
Attention: Darlene Celaya, Emission Inventory Team
Air Quality Division, Compliance Section 3415A-3
1110 West Washington Street
Phoenix, AZ 85007**

If you have any question or have difficulty completing this form, please contact Darlene Celaya at (602) 771-7662.

FORM 1: FACILITY GENERAL INFORMATION**YEAR 2004****SECTION I: *Plant Identification & Mailing Information***

Customer Name: _____

Place Name: _____ Place ID: _____

Mailing Address: _____ City: _____ State: _____ Zip: _____

County: _____

Phone: _____ Fax: _____

Permit Number: _____ General Permit: Yes No

SECTION II: *EI Contact*

EI Contact Name: _____ Title: _____

Telephone: _____ Fax: _____

SECTION III: *Confidential Request*

Pursuant to Arizona Revised Statutes §49-432 and §49-201, do you claim the Emissions Inventory data submittal confidential. If yes include which portions of the inventory are confidential along with a brief explanation:

Yes ☐

No ☐

FORM 2: EQUIPMENT, PROCESS & STACK DATA
YEAR 2004
Table 1: Equipment List

	Generator #1	Generator #2	Generator #3
Equipment ID			
ATO#			
Rated Capacity			
Actual Hours Operated (hours/year)			

Table 2: Stack Information

	Stack #1	Stack #2	Stack #3
Height (feet)			
Diameter (feet)			
Velocity (feet/second)			
Exhaust Gas Temperature (F)			
Flow Rate (actual cubic feet per minute)			

Sample Emission Calculation: Emissions = $\frac{\text{Capacity (hp)} \times \text{Hours of Operation (hrs)} \times \text{Emission Factor (Pounds per hp-hour)}}{2000 \text{ pounds per ton}}$

For a Generator of capacity 400hp and using Gasoline fuel and operated for 1500 hours during the year 2004, the emissions of Nitrogen Oxides (NOx) will be as follows:

$$\text{Emissions} = \frac{400 \text{ hp} \times 1500 \text{ hours} \times 0.011 \text{ pounds per hp-hr}}{2000 \text{ pounds per ton}} = 3.3 \text{ tons per year}$$

FORM 3: EMISSIONS CALCULATIONS

YEAR 2004

FUEL - GASOLINE *Conversion Number - 1 kw = 1.3410 horsepower*

Generator #1					Generator #2			
Pollutants	Max. Capacity (1) horsepower	Operational Hours (2) hours/year	Emission Factor (3) pounds/hp-hour	Emissions = (1)x(2)x(3)/2000 tons/year	Max. Capacity (1) horsepower	Operational Hours (2) hours/year	Emission Factor (3) pounds/hp-hour	Emissions = (1)x(2)x(3)/2000 tons/year
Particulate Matter <10 Microns (PM10)			0.00072				0.00072	
Particulate Matter (PM)			0.00072				0.00072	
Carbon Monoxide (CO)			0.44				0.44	
Volatile Organic Compounds (VOC)			0.022				0.022	
Sulfur Oxides (SOx)			0.00059				0.00059	
Nitrogen Oxides (NOx)			0.011				0.011	

FUEL - NATURAL GAS OR LIQUID PROPANE GAS

Generator #1					Generator #2			
Pollutants	Max. Capacity (1) horsepower	Operational Hours (2) hours/year	Emission Factor (3) pounds/hp-hour	Emissions = (1)x(2)x(3)/2000 tons/year	Max. Capacity (1) horsepower	Operational Hours (2) hours/year	Emission Factor (3) pounds/hp-hour	Emissions = (1)x(2)x(3)/2000 tons/year
Particulate Matter <10 Microns (PM10)			0.0000726				0.0000726	
Particulate Matter (PM)			0.0000726				0.0000726	
Carbon Monoxide (CO)			0.0029				0.0029	
Volatile Organic Compounds (VOC)			0.000842				0.000842	
Sulfur Oxides (SOx)			0.00000435				0.00000435	
Nitrogen Oxides (NOx)			0.0206				0.0206	

FORM 3: EMISSIONS CALCULATIONS

YEAR 2004

FUEL - DIESEL CAPACITY - Greater Than 600 Horsepower

Generator #1					Generator #2			
Pollutants	Max. Capacity (1) horsepower	Operational Hours (2) hours/year	Emission Factor (3) pounds/hp-hour	Emissions = (1)x(2)x(3)/2000 tons/year	Max. Capacity (1) horsepower	Operational Hours (2) hours/year	Emission Factor (3) pounds/hp-hour	Emissions = (1)x(2)x(3)/2000 tons/year
Particulate Matter <10 Microns (PM10)			0.0007				0.0007	
Particulate Matter (PM)			0.0007				0.0007	
Carbon Monoxide (CO)			0.0055				0.0055	
Volatile Organic Compounds (VOC)			0.0007				0.0007	
Sulfur Oxides (SOx)			0.0065				0.0065	
Nitrogen Oxides (NOx)			0.024				0.024	

FUEL - DIESEL CAPACITY - Less Than or Equal to 600 Horsepower

Generator #1					Generator #2			
Pollutants	Max. Capacity (1) horsepower	Operational Hours (2) hours/year	Emission Factor (3) pounds/hp-hour	Emissions = (1)x(2)x(3)/2000 tons/year	Max. Capacity (1) horsepower	Operational Hours (2) hours/year	Emission Factor (3) pounds/hp-hour	Emissions = (1)x(2)x(3)/2000 tons/year
Particulate Matter <10 Microns (PM10)			0.0022				0.0022	
Particulate Matter (PM)			0.0022				0.0022	
Carbon Monoxide (CO)			0.0067				0.0067	
Volatile Organic Compounds (VOC)			0.0025				0.0025	
Sulfur Oxides (SOx)			0.002				0.002	
Nitrogen Oxides (NOx)			0.031				0.031	

FORM 4: SUMMARY & CERTIFICATION**YEAR 2004**

Total all the emissions for each pollutant and enter in the table below.

Pollutant	Tonnage (tons per year)
Particulate Matter (PM)	
Particulate Matter Less Than 10 Microns (PM10)	
Nitrogen Oxides (NOx)	
Sulfur Oxides (SOx)	
Volatile Organic Compounds (VOC)	
Carbon Monoxide (CO)	

Certification of Truth & Accuracy

I certify that I have knowledge of the facts set forth in this questionnaire, and that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Arizona Department of Environmental Quality as public record.

Signature of Responsible Official: _____ Date: _____

Print Name: _____

Title: _____